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| 10/697,075 | 10/30/2003 | Michael L. Mallary | 3123-526 | 8116 |

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| EXAMINER | |
|---|---|
| DAVIDSON, DAN | |

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|---|---|
| 2627 | |

DATE MAILED: 05/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/697,075 | MALLARY ET AL. | |
| | Examiner | Art Unit | |
| | Dan I. Davidson | 2627 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *25 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-3 and 5-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-31 and 34-46* is/are rejected.

7)☒ Claim(s) *32 and 33* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *01252006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

1. The amendment filed January 25, 2006 has been received and has been made of record. An Office Action in response to the above amendment follows. Since this Action contains rejections not necessitated by amendment, this Action will not be final.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 45 is rejected under 35 U.S.C. 102(e) as being anticipated by Clinton et al (US 2003/0227701 A1).

Clinton et al disclose a method for writing data to a longitudinal recording layer, comprising: providing a perpendicular write head (Fig. 2, 10; paragraph 32) comprising a write pole (Fig. 2, 12) and a return pole (Fig. 2, 14); disposing a longitudinal magnetic recording layer under the write head (Fig. 2, 24, 30; paragraph 32) and a soft magnetic underlayer under the recording layer (Fig. 2, 26; paragraph 32); moving the longitudinal recording layer relative to the write head (paragraph 14; disk drives rotate); and generating a magnetic flux between the write pole and the soft magnetic underlayer (see Fig. 2), wherein the magnetic flux is applied substantially perpendicular to the

longitudinal recording layer (paragraph 32) and the magnetic flux is directed to the return pole by the soft magnetic underlayer (see Fig. 2, 20).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-2, 5-8, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clinton et al (US 2003/0227701 A1) in view of Akimoto et al (US 6,541,104 B2).

Re claim 1; Clinton et al disclose a magnetic recording device, comprising: a perpendicular write head (Fig. 2, 10; paragraph 32) comprising a write pole having a write pole tip (Fig. 2, 12), and a return pole (Fig. 2, 14); and a recording medium comprising a longitudinal magnetic recording layer (Fig. 2, 24, 30; paragraph 32) and a soft magnetic underlayer (Fig. 2, 26; paragraph 32); wherein during operation of the magnetic recording device the longitudinal recording layer is disposed in relation to the perpendicular write head to place the magnetic recording layer within an effective write gap formed by the perpendicular write head and the underlayer (Fig. 2, paragraph 32).

Clinton et al do not disclose a non-magnetic spacer layer disposed between the longitudinal magnetic recording layer and the soft magnetic underlayer. Akimoto et al teach this limitation (Fig. 1, 14). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to have a non-magnetic spacer layer in

Clinton et al; motivation being reduction in noise that would otherwise be contributed by the soft underlayer (Hsiao et al, US 2005/0190478 A1, paragraph 20; Akimoto et al, col. 4, line 65 – col. 5, line 4).

Re claim 2; Clinton et al disclose that the perpendicular write head is a shielded pole write head comprising a write shield (paragraph 49 & Fig. 8).

Re claims 5-7; Clinton et al do not disclose the limitations at these claims. Akimoto et al teach that the non-magnetic spacer layer (i.e. the intermediate layer) can have a thickness of from about 10 to 25 nanometers (col. 2, lines 50-52). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to have a non-magnetic spacer layer with the thickness listed above in Clinton et al; motivation being having a medium with a practical coercivity and low noise (col. 4, line 65 – col. 5, line 4).

Re claim 8; Clinton et al disclose the limitations at claim 1 as discussed above. Clinton et al do not disclose that the soft magnetic underlayer comprises NiFe. Akimoto et al teach this limitation (col. 2, lines 20-21). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to use NiFe as the material for the soft magnetic underlayer in Clinton et al; motivation being reduction in the demagnetization field of the transition area (col. 1, lines 60-61).

Re claim 11; Clinton et al disclose that the soft magnetic underlayer has a thickness sufficient to prevent saturation of the underlayer by the perpendicular write head (this is shown through disclosing that the SUL "pulls" the magnetic field through the recording medium).

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clinton et al (US 2003/0227701 A1) in view of Akimoto et al (US 6,541,104 B2) as applied to claim 1 above, and further in view of McGeehin et al (US 6,807,027 B2).

Clinton et al and Akimoto et al disclose or teach the limitations at claim 1 as discussed above.

The above references do not disclose or teach that the perpendicular write head is a monopole write head. McGeehin et al teach this feature (Fig. 1, 26). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to use a monopole write head in Clinton et al in place of a shielded pole write head; motivation being reducing the size of the head.

7. Claims 9-10 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clinton et al (US 2003/0227701 A1) in view of Akimoto et al (US 6,541,104 B2) as applied to claim 1 above, and further in view of Wood et al (US 5,041,922 A).

The combination of Clinton et al and Akimoto et al discloses or teaches the limitations at claim 1 as discussed above.

Re claim 9; the above references do not disclose or teach that the soft magnetic underlayer has a magnetic coercivity of not greater than about 5 Oersteds. Wood et al teach this limitation (col. 8, lines 65-67). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to have a low coercivity soft magnetic underlayer in Clinton et al; motivation being effecting transfer of the flux between the head and the magnetic recording layer (col. 6, lines 27-29).

Re claim 10; the above references do not disclose or teach that the soft magnetic underlayer has a magnetic permeability of at least about 50. Wood et al teach this limitation (col. 8, line 68 – col. 9, line 2). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to have a high permeability soft magnetic underlayer in Clinton et al; motivation being effecting transfer of the flux between the head and the magnetic recording layer (col. 6, lines 27-29).

Re claims 12-13; the above references do not disclose or teach that the soft magnetic underlayer has a thickness of at least about 30 nm to 200nm. Wood et al teach this limitation (col. 8, lines 61-62). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to have a soft magnetic underlayer with a thickness of from about and at least 30 nm to 200 nm in Clinton et al; motivation being effecting transfer of the flux between the head and the magnetic recording layer (col. 6, lines 27-29).

8. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clinton et al (US 2003/0227701 A1) in view of Akimoto et al (US 6,541,104 B2) as applied to claim 1 above, and further in view of Ahlert et al (US 5,492,775 A).

The combination of Clinton et al and Akimoto et al discloses or teaches the limitations at claim 1 as discussed above.

The above references do not disclose or teach that the longitudinal magnetic recording layer has a coercivity of at least about 4000 Oe. Ahlert et al teach this limitation (claim 6). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to have a magnetic recording layer with a coercivity of at

least 4kOe in Clinton et al; motivation being ensuring that the recording layer is not demagnetized (i.e. ensuring that data is not lost).

9. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clinton et al (US 2003/0227701 A1) in view of Akimoto et al (US 6,541,104 B2) as applied to claim 2 above, and further in view of Parker et al (US 2003/0227714 A1).

The combination of Clinton et al and Akimoto et al discloses or teaches the limitations at claims 1-2 as discussed above.

The above references do not disclose or teach that the distance from the top of the soft magnetic underlayer to the write pole tip is about equal to the distance from the write pole tip to the write shield. Parker et al teach this limitation (paragraph 26; by Applicant's own definition at page 13, lines 26-27 of the specification, if the ratio of the distances is anywhere between 1:2 and 2:1, the above limitation is satisfied). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to have the above ratio of distances in Clinton et al; motivation being the ability for the magnetic flux in a write head to 'jump' across the gap, travel in a soft underlayer of the recording medium to a location under the return pole, and then jump back into the return pole (paragraph 26).

10. Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clinton et al (US 2003/0227701 A1) in view of Akimoto et al (US 6,541,104 B2) as applied to claim 1 above, and further in view of Koda et al (US 2004/0067390 A1).

The combination of Clinton et al and Akimoto et al discloses or teaches the limitations at claim 1 as discussed above.

The above references do not disclose or teach that the distance from the top of the soft magnetic underlayer to the center of the longitudinal magnetic recording layer is about equal to the magnetic spacing (defined in the specification at page 13, lines 21-23 as the distance from the center of the longitudinal magnetic recording layer to the pole tip); that the distance from the top of the soft magnetic underlayer to the center of the longitudinal magnetic recording layer is from about 13 to about 31 nanometers; and that the magnetic spacing is from about 10 to about 30 nanometers. Koda et al teach these limitations (Fig. 1; paragraphs 17, 37-38, 40-42; distance between the head and medium = 5nm; thickness of lubricant layer = 1nm; thickness of protective layer = 3nm; thickness of recording layer = 12nm; thickness of underlayer = 5nm – 20nm). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to have the distances provided above in Clinton et al; motivation being securing the crystalline orientation of the recording layer while suppressing the increase in medium noise (paragraph 17).

11. Claims 19-26 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clinton et al (US 2003/0227701 A1) in view of Akimoto et al (US 6,541,104 B2) and further in view of Wood et al (US 5,041,922 A).

Re claims 19 and 22; Clinton et al disclose a shielded pole write head having a write pole tip (Fig. 8, 12) and a write shield (Fig. 8, 14); and a magnetic recording medium disposed under the shielded pole write head (Fig. 8, 22), the magnetic recording medium comprising: a soft magnetic underlayer (Fig. 8, 26) and a longitudinal magnetic recording layer disposed over the underlayer (Fig. 8, 24, 30).

Clinton et al do not disclose a non-magnetic spacer layer disposed between the soft magnetic underlayer and the longitudinal magnetic recording layer. Akimoto et al teach this limitation (Fig. 1, 14). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to have a non-magnetic spacer layer in Clinton et al; motivation being reduction in noise that would otherwise be contributed by the soft underlayer (Hsiao et al, US 2005/0190478 A1, paragraph 20; Akimoto et al, col. 4, line 65 – col. 5, line 4).

Clinton et al further do not disclose that the magnetic permeability of the soft magnetic underlayer is at least 50 or 100. Wood et al teach this limitation (col. 8, line 68 – col. 9, line 2). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to have a high permeability soft magnetic underlayer in Clinton et al; motivation being effecting transfer of the flux between the head and the magnetic recording layer (col. 6, lines 27-29).

Re claims 20-21; Clinton et al do not disclose that the soft magnetic underlayer has a thickness of at least about 30 nm to 200nm. Wood et al teach this limitation (col. 8, lines 61-62). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to have a soft magnetic underlayer with a thickness of from about and at least 30 nm to 200 nm in Clinton et al; motivation being effecting transfer of the flux between the head and the magnetic recording layer (col. 6, lines 27-29).

Re claim 23; Clinton et al do not disclose that the soft magnetic underlayer has a magnetic coercivity of not greater than about 5 Oersteds. Wood et al teach this limitation as well (col. 8, lines 65-67). It would have been obvious to one of ordinary

skill in the art at the time of Applicant's invention to have a low coercivity soft magnetic underlayer in Clinton et al; motivation being effecting transfer of the flux between the head and the magnetic recording layer (col. 6, lines 27-29).

Re claims 24-26; Clinton et al do not disclose the limitations at these claims. Akimoto et al teach that the non-magnetic spacer layer (i.e. the intermediate layer) can have a thickness of from about 10 to 25 nanometers (col. 2, lines 50-52). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to have a non-magnetic spacer layer with the thickness listed above in Clinton et al; motivation being having a medium with a practical coercivity and low noise (col. 4, line 65 – col. 5, line 4).

Re claim 34; Clinton et al disclose that the shielded pole write head comprises a write pole and a write coil wrapped around the write pole (Fig. 2, 18; paragraph 31, lines 6-7).

12. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clinton et al (US 2003/0227701 A1) in view of Akimoto et al (US 6,541,104 B2) and further in view of Wood et al (US 5,041,922 A) as applied to claim 19 above, and further in view of Ahlert et al (US 5,492,775 A).

The combination of Clinton et al, Akimoto et al, and Wood et al discloses or teaches the limitations at claim 19 above.

The above references do not disclose or teach that the longitudinal magnetic recording layer has a coercivity of at least about 4000 Oe. Ahlert et al teach this limitation (claim 6). It would have been obvious to one of ordinary skill in the art at the

time of Applicant's invention to have a magnetic recording layer with a coercivity of at least 4kOe in Clinton et al; motivation being ensuring that the recording layer is not demagnetized (i.e. ensuring that data is not lost).

13. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clinton et al (US 2003/0227701 A1) in view of Akimoto et al (US 6,541,104 B2) and further in view of Wood et al (US 5,041,922 A) as applied to claim 19 above, and further in view of Parker et al (US 2003/0227714 A1).

The combination of Clinton et al, Akimoto et al, and Wood et al discloses or teaches the limitations at claim 19 as discussed above.

The above references do not disclose or teach that the distance from the top of the soft magnetic underlayer to the write pole tip is about equal to the distance from the write pole tip to the write shield. Parker et al teach this limitation (paragraph 26; by Applicant's own definition at page 13, lines 26-27 of the specification, if the ratio of the distances is anywhere between 1:2 and 2:1, the above limitation is satisfied). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to have the above ratio of distances in Clinton et al; motivation being the ability for the magnetic flux in a write head to 'jump' across the gap, travel in a soft underlayer of the recording medium to a location under the return pole, and then jump back into the return pole (paragraph 26).

14. Claims 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clinton et al (US 2003/0227701 A1) in view of Akimoto et al (US 6,541,104 B2) and

further in view of Wood et al (US 5,041,922 A) as applied to claim 19 above, and further in view of Koda et al (US 2004/0067390 A1).

The combination of Clinton et al, Akimoto et al, and Wood et al discloses or teaches the limitations at claim 19 as discussed above.

The above references do not disclose or teach that the distance from the top of the soft magnetic underlayer to the center of the longitudinal magnetic recording layer is about equal to the magnetic spacing (defined in the specification at page 13, lines 21-23 as the distance from the center of the longitudinal magnetic recording layer to the pole tip); that the distance from the top of the soft magnetic underlayer to the center of the longitudinal magnetic recording layer is from about 13 to about 31 nanometers; and that the magnetic spacing is from about 10 to about 30 nanometers. Koda et al teach these limitations (Fig. 1; paragraphs 17, 37-38, 40-42; distance between the head and medium = 5nm; thickness of lubricant layer = 1nm; thickness of protective layer = 3nm; thickness of recording layer = 12nm; thickness of underlayer = 5nm – 20nm). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to have the distances provided above in Clinton et al; motivation being securing the crystalline orientation of the recording layer while suppressing the increase in medium noise (paragraph 17).

15. Claims 35-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akimoto et al (US 6,541,104 B2) in view of Wood et al (US 5,041,922 A) and further in view of Ahlert et al (US 5,492,775 A).

Re claims 35-37 and 44; Akimoto et al disclose a magnetic recording medium, comprising: a rigid substrate (Fig. 1, 11); an underlayer disposed over the substrate (Fig. 1, 13); a non-magnetic spacer layer disposed over the underlayer (Fig. 1, 14), the non-magnetic spacer layer having a thickness from 10 to 25 nanometers (col. 2, lines 50-52); and a longitudinal magnetic recording layer disposed over the non-magnetic spacer layer (Fig. 1, 15).

Akimoto et al fail to disclose that the underlayer has a magnetic permeability of at least 50 or 100. Wood et al teach this limitation (col. 8, line 68 – col. 9, line 2). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to have a high permeability soft magnetic underlayer in Akimoto et al; motivation being effecting transfer of the flux between the head and the magnetic recording layer (col. 6, lines 27-29).

Akimoto et al further fail to disclose that the longitudinal recording layer has a coercivity of at least 4000 Oe. Ahlert et al teach this limitation (claim 6). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to have a magnetic recording layer with a coercivity of at least 4000 Oe in Akimoto et al; motivation being ensuring that the recording layer is not demagnetized (i.e. ensuring that data is not lost).

Re claims 38 and 39; Akimoto et al fail to disclose that the underlayer has a magnetic coercivity not greater than 2 Oe. Wood et al teach this limitation (col. 8, lines 65-67). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to have a low coercivity soft magnetic underlayer in Akimoto et al;

motivation being effecting transfer of the flux between the head and the magnetic recording layer (col. 6, lines 27-29).

Re claims 40-42; Akimoto et al fail to disclose that the soft magnetic underlayer has a thickness of at least about 30 nm to 200 nm. Wood et al teach this limitation (col. 8, lines 61-62). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to have a soft magnetic underlayer with the above thickness in Akimoto et al; motivation being effecting transfer of the flux between the head and the magnetic recording layer (col. 6, lines 27-29).

Re claim 43; Akimoto et al disclose that the underlayer is fabricated from a material selected from the group NiFe, FeTaC and CoZrNb (col. 2, lines 20-21).

16. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clinton et al (US 2003/0227701 A1) in view of Ahlert et al (US 5,492,775 A).

Clinton et al disclose a magnetic recording device, comprising: a perpendicular write head (Fig. 2, 10; paragraph 32) comprising a write pole having a write pole tip (Fig. 2, 12), and a return pole (Fig. 2, 14); and a recording medium comprising a longitudinal magnetic recording layer (Fig. 2, 24, 30; paragraph 32) and a soft magnetic underlayer (Fig. 2, 26; paragraph 32), wherein during operation of the magnetic recording device the longitudinal recording layer is disposed in relation to the perpendicular write head to place the magnetic recording layer within an effective write gap formed by the perpendicular write head and the underlayer (Fig. 2; paragraph 32).

Clinton et al do not disclose that the longitudinal magnetic recording layer has a coercivity of at least 4000 Oe. Ahlert et al teach this limitation (claim 6). It would have

been obvious to one of ordinary skill in the art at the time of Applicant's invention to have a magnetic recording layer with a coercivity of at least 4kOe in Clinton et al in view of Akimoto et al and further in view of Wood et al; motivation being ensuring that the recording layer is not demagnetized (i.e. ensuring that data is not lost).

***Allowable Subject Matter***

17. Claims 32 and 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record does not discuss the use of a write coil together with a bucking coil in a write head.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan I. Davidson whose telephone number is (571) 272-7552. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea L. Wellington can be reached on (571) 272-4483. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DID
Dan I Davidson
April 25, 2006

ANDREA WELLINGTON
SUPERVISORY PATENT EXAMINER